

Preserving The Hand-Painted Films of Margaret Tait

Joss Winn

27th September 2002

Dissertation submitted in partial fulfilment of the requirements of the degree of
Masters of Arts.

© This copy of the thesis has been supplied on condition that anyone who
consults it is understood to recognise that its copyright rests with the author and
that no quotation from the thesis, nor any information derived therefrom, may be
published without the author's prior, written consent.

Contents

1	'On The Idea of Permanence'	3
2	Background	5
2.1	Margaret Tait	5
2.2	<i>Calypso</i>	7
2.3	<i>John MacFadyen</i> and <i>Painted Eightsome</i>	11
2.4	<i>Numen of The Boughs/Colour Poems</i>	12
2.5	<i>Garden Pieces</i>	15
3	The Preservation of the Hand-Painted Film Elements	16
3.1	General Introduction	16
3.2	Notes On Research Methods	16
3.3	Summary of Film Elements and Condition Report	17
3.4	<i>Calypso</i> (1952-7)	17
3.4.1	Summary of Film Elements and Condition	17
3.4.2	Notes on The Preservation of <i>Calypso</i>	18
3.4.3	On Dyes	19
3.4.4	On Mould	22
3.5	<i>John MacFadyen/Painted Eightsome</i> (1955-1971)	24
3.5.1	Summary of Film Elements and Condition	25
3.5.2	Notes For The Preservation of <i>Painted Eightsome</i> and <i>John</i> <i>MacFadyen</i>	26
3.6	<i>Numen of The Boughs</i> (1973-74)	27

3.6.1	Summary of Film Elements and Condition	27
3.6.2	Notes For The Preservation of <i>Numen of The Boughs</i>	27
3.7	<i>Colour Poems</i> (1974)	28
3.7.1	Summary of Film Elements and Condition	28
3.7.2	Notes For The Preservation of <i>Colour Poems</i>	29
3.8	<i>Garden Pieces</i> (1994-98)	29
3.8.1	Summary of Film Elements and Condition	29
3.8.2	Notes For The Preservation of <i>Garden Pieces</i>	30
4	Restoration and Duplication	31
4.1	Suggested Routes	31
4.2	Duplication by Eastman Colour Internegative Film	31
4.3	Duplication by Black and White Separation Positives	33
4.4	Digital Restoration for Duplication to Film	35
5	Conclusions	36
5.1	On The Idea of Permanence	36

Introduction

Acknowledgments

Any ineptitude found in this paper would be ten-fold were it not for the generous advice from the following people to whom I am very grateful:

The Scottish Film and Television Archive: Kay Foubister, Janet McBain, Alan Russell, Adrienne Wilson; *British Artists' Film & Video Collection*: David Curtis; *Digital Film Lab*: Paul Read; *British Film Institute*: Brian Pritchard; *Imperial War Museum*: David Walsh; and not least Mike Leggett; Peter Hollander and Bryan Llewellyn.

They offered valuable assistance based on their expert experience and professional integrity and any errors that remain are my own.

Abstract

In this paper I discuss a small amount of the work of Margaret Tait. The Introduction offers a personal discussion on the profession of Archiving which I revisit in my conclusion. Section Two provides a general overview of Margaret Tait's life and influences. This brief biographical information serves as a background for the more substantial technical discussion in Section Three. Though I do enjoy Tait's films and find her work compelling, I should emphasise that I am not concerned with providing a critique of Margaret Tait's films nor a complete overview of her life and work. I deem that to be a quite different paper and one I am not interested in writing. My main purpose here is to trace the technical developments Tait made in her film making and show how an understanding of her practices can help in the

restoration and preservation of her films. I hope this paper also demonstrates that the biographical is inseparable from the technical and for the Archivist, these two approaches to Tait's work are again inseparable from the ethical and philosophical dimensions of the idea of permanence.

1 'On The Idea of Permanence'

To say that archival records are permanent seems to fix their nature beyond doubt and to establish beyond challenge the full extent of the archivist's responsibility to them.¹

Two years ago, while writing a paper on the preservation of amateur and small gauge film, I came across a reference to an article in the *American Archivist* by James M. O'Toole.² The article, 'On The Idea of Permanence', highlighted for me what is so thoroughly compelling about the profession of film archiving: It is a profession which reacts to the mortality of mankind, not as the physician would by searching for a cure, but by endeavouring to preserve the objects and information man once created in his own image. That is, I see in the archiving profession an attempt to extend the life of a culture, society, institution or individual not by directly fortifying them as would a physician but by permanently extending the life of the image or the representation of a culture, society, institution or individual through the objects and information left by the passage of time.

As O'Toole has shown, the archiving profession (and not least the film archiving profession), uses language today which embodies the religious world-view of our ancient predecessors and what we have today is an idea of permanence which can be traced back to the advent of literacy. O'Toole is an Historian and his article shows how archivists' ideas of permanence have undergone change since the foundation of the profession. He argues that within the 'archival lexicon' the word permanent has been used without much reflection. At first, this struck me as odd. I had spent five years at University from 1993-98 studying and later teaching, Buddhism, a religious and philosophical tradition based entirely around the idea of impermanence.³ By contrast, my new profession commits substantial amounts of time and money to ensure, as far as possible, that the product of mankind is 'permanent'.

O'Toole's article focuses on written records, tracing the shift from oral to written traditions and consequently the investment in an idea of the permanence of a culture's language and writing. Initially, it was the 'permanence of information' which the earliest archives sought to achieve by publishing and diffusing their materials, distinguishing between the permanence of the document itself and the information which it carried. Historical collections were initially valued for the information they held which testified to the "pastness of the past" and thereby certified 'the reality

¹O'Toole, 1989, 12.

²O'Toole, 1989.

³In the simplest of terms, Buddhist philosophy is usually summarised as 'The Four Noble Truths': The Existence of Impermanence (*Dukkha*); The Arising of Suffering Due to Desire (*Samudaya*); The Cessation of Suffering (*Nirodha*); The Path to the Cessation of Suffering (*Magga*).

of progress.’ Only later did these repositories come to value their collections as ‘things’ worthy in their own right and, later still, as sources for specialised study by professional scholars.”⁴ This friction between the information and the artifact is no less an issue when preserving a motion-picture film, essentially a procedure of copying.

Ironically, technical developments over the years have ensured greater longevity of the carrier and its information yet also offered greater insight into the ultimate inherent instability of physical objects. Put simply, all things eventually decay and it is with this in mind that the film archivist must approach the task of preservation. Deterioration might symbolise failure to some both inside and outside the profession, but it is the archivist’s job to be able to offer an alternative understanding of the ‘ravages of time’. I hope by the end of this paper, I have begun to do so.

‘Preservation’ is often confused with conservation and restoration. O’Toole argues that the emergence of this confusion occurred during the 1940s when ‘permanence’ increasingly became a technical term due to the shift in focus of archivist’s activities towards the care and treatment of their physical collections. In film archiving, the terms remain slightly confused depending on who is being addressed and to add to this confusion we might include the often used phrase, ‘passive preservation’. This basically refers to the preparation of the film for correct storage as distinct from ‘preservation’ which might indicate both conservation and/or restoration.

In the 1970s, a rapid increase in the different types of media being produced and collected and the greater technical ability to increase the longevity of objects meant that the sheer quantity of material archivists were responsible for had become overwhelming. Their limitless commitment to preservation became more selective and the meaning of ‘permanence’ moved in line with a general interpretive shift: from history being regarded as a linear record of events to history as a dynamic presentation of human perception.⁵ An archive’s collection, once prized as immutable evidence of the past, gradually took on a different value. Objects that were previously prescribed an ‘intrinsic value’ were reconsidered and new standards were developed to judge this. This pragmatic re-evaluation continues. Today, in Britain for example, the Prime Minister’s rhetoric of “education, education and education” can be found reflected in the British Film Institute’s 2000/2001 Annual Review which places an overwhelming emphasis on education through access.⁶

This re-evaluation of archive collections led to the tendency to talk more of ‘passive preservation’ through the maintenance of a proper storage environment and less of routine conservation and restoration as a matter of procedure. Collections were increasingly seen as having ‘enduring value’ rather than being permanent records with ‘intrinsic value’. Today the absolute idea of permanence has finally

⁴O’Toole, 1989, 16.

⁵O’Toole, 1989, 22.

⁶“Education remains our first priority. In agreement with the purposes of the Department of Culture, Media and Sport as set out by the Film Council by whom we are funded, the *bfi* seeks to promote the knowledge and understanding of film and the moving image throughout Britain’s schools and colleges.” Joan Bakewell CBE, *bfi* Chair. These are the first two sentences of the Review.

given way to a more relative value defined by an “information-rich” climate which is “inclined to accord any particular datum or document a lesser value than would an information-poor society”⁷

This scant history of the idea of permanence has enabled me to introduce a number of considerations which will again be addressed in the closing section of this paper. There, I attempt to discuss the ethical implications of preserving five hand-painted films by the late Scottish film maker, Margaret Tait, held at the Scottish Film and Television Archive (SFTVA). The ideas of permanence, information vs. object-as-artifact, preservation, conservation and restoration are all relevant to the films under discussion and hopefully this paper demonstrates that a seemingly insignificant number of short films by a relatively unknown film maker can provoke serious ethical considerations that have implications throughout the archiving profession. Indeed, my guess is that debate over this ethic will only intensify over the next decade or so with the advance of digital technologies.

Finally, I should emphasise that any recommendations I make in this paper are done so with an awareness of the investment of public money and archival resources that such preservation necessitates. I believe that a film archivist should be fully aware of the implications of this relationship and their responsibility to the greater public good. Naturally, professional ethics should have a firm philosophical basis by which the profession can justify and defend its methods and practice, and it is in recognition of this that I felt I should begin by introducing the idea of permanence. It is, in a sense, my philosophical starting point.

2 Background

2.1 Margaret Tait

Born on Armistice Day in 1918 in Kirkwall, Orkney, Margaret Caroline Tait made her first film in 1951 and her last in 1998. During that time, she made thirty-two films ranging from short hand-painted animations to a feature-length narrative fiction film. All except the feature, *Blue-Black Permanent* (1992), were independently financed despite periodic attempts to interest sponsors in her work. The financing of her work while she was alive remains significant even today because the collection of film and sound elements donated by her husband Alex Pirie, to the SFTVA very much reflects the unusual circumstances under which she made films for almost forty years.

At the age of nine, she was sent to the Esdaile boarding-school in Edinburgh and remained in the city to study medicine at Edinburgh University, graduating with a MB, CH.B in 1941. In 1943, she joined the Royal Army Medical Corps and was posted to military hospitals overseas, first in central India and then in Ceylon. Following the Japanese surrender in August 1945, she was posted to Johore Bahru, Malaya and Singapore. Then, shortly after the war, she went to Perugia for a short

⁷O’Toole, 1989, 24.

time to study Italian. She returned to civilian life in 1946 and except for another spell in Italy, continued to engage in periodic spells of locum work in hospitals and general practices until 1960.

Her interest in film making began early on and while practicing medicine in the Army she wrote scripts for feature films. There is some evidence to suggest that she possessed a cine camera during this period, too.⁸ Interest in her scripts was shown towards one or two but they weren't taken: "I also tried a competition or two, without success. I was told that production companies preferred to receive scripts through an agency; but there was the snag that agencies didn't want you unless you'd been accepted."⁹ On the basis of doing research for a script she hoped to sell about St. Francis of Assisi, she returned to Italy in the spring of 1950. By the summer, she had found out that Rossellini had just finished a film about St. Francis (Francesco, Guigliare di Dio, 1950), and gave up trying to attract interest in her screenplays for the time being, turning her attention instead to the writing/directing course at the Centro Sperimentale di Cinematografia which started in the autumn. Tuition was free for foreign students and she lived frugally though "without hardship" off her army gratuity and earnings from teaching English.

In this post-war period, Italian directors such as Rossellini, De Sica and Visconti were working during the height of Neo-Realism and these films were always accompanied in cinemas with a short documentario, or corto metraggio ('short film') described by Tait as sometimes "more of an essay or poetic evocation of something."

The editing could be on a different principle, less to do with following action and more to do with creating a continuity... in some of these shorts the film consisted of this sort of shot to shot continuity based on pictorial composition or allusion from detail to detail...¹⁰ While in Rome, impatient to be actually doing something, she and two other foreign students at the Centro began making short films on their own using the "available actuality" associated with neo-realist films. One of those students was Peter Hollander, an American with whom she would start a production company, Ancona Films Ltd (named after the Via Ancona road in Rome) and collaborate on film making projects while in Italy.¹¹ Hollander remembers the company as "limited indeed. Mainly in the area of operating capital."¹² In fact, although always starved of capital, Ancona Films had offices in Rome, New York and Edinburgh, reflecting the cities where its partners would eventually reside and its Edinburgh office remained registered until 1973.

While tuition may have been free for foreign students at the Centro, film stock and laboratory costs were not. Tait and Hollander found themselves having to assist the Italian students if they were to gain experience making a 35mm black and white short by the end of the year. Frustrated by this, they decided to make their own films without any help from the school. Whereas the Italian students remained

⁸Hollander mentions this in his autobiography.

⁹Margaret Tait: *Filmmaker*, 1983, draft script.

¹⁰Margaret Tait: *Filmmaker*, 1983, draft script.

¹¹*One is One* (1951), *The Lion*, *The Griffin and the Kangaroo* (1951) and *Calypso* (1955 - but made while in Italy) were all produced in Italy under Ancona Films.

¹²Hollander, autobiography.

more conservative in their film making, preferring to use the sound-stage instead of locations, Tait, Hollander and an Argentinian called Fernando Birri,¹³ took to the streets with their 16mm cameras, eager to express what they had learned from the neo-realist directors who taught at the Centro. Their first film was called, *One is One* (1951).

Margaret had devised an arcane system to indicate the opus numbers of our films in their titles. We named our first-born *One is One*. For those not in on Margaret's code, the title was meant to suggest the line "One is one and ever more shall be so..." from the English folk song Green Grow the Rushes-O. We ran out of money well before the film was finished. We did edit what footage we had and used to run the print like a silent movie with Ottorino Respighi's Fountains of Rome as the musical accompaniment.¹⁴ Tait and Hollander secured funding from Perugia University for their second film having convinced them that "they needed a film to promote their language classes for foreigners in the English speaking world. The American Commission for Cultural Exchange with Italy also saw use in such a film and between them they paid for a large part of the film stock, its developing and printing."¹⁵ The film cost almost half a million lire and was called *The Lion, the Griffin and the Kangaroo*. The title being contrived out of the official symbols of Perugia (the lion and the griffin) and the kangaroo representing all the foreigners studying at the University. The title also suggested that it was their second film referring to the song, 'The animals are coming, two by two...' The film was well received by the rectors of the University except for one reservation:

"Why did you make the town look so medieval and old," they wanted to know, "it looks as though you have to go everywhere on foot. We also have many wide streets. Why, an American student could even bring his car to Perugia!"¹⁶

With their partnership established, Tait and Hollander turned to their next project, a hand-painted film they called *Calypso*.

2.2 *Calypso*

While I intend to continue discussing the life and work of Margaret Tait, from here on in I shall do so with reference to the hand-painted and hand-drawn films she

¹³Like Hollander, who worked as a documentary film maker for the United Nations for 29 years before becoming "Chief of everything visual" at the UN, NYC, Birri also went on to achieve great success after leaving Italy. "Birri is known as the "Father of the New Latin American Cinema". He studied film at the Centro Sperimentale di Cinematografia in Rome, and after graduating returned to Argentina where he founded in the province of Santa Fe, the first film school specialised in documentalism in Latin America. He was forced to exile due to the Argentinian military coup de etat, and lived in Italy where he shot his three-hour experimental film "Org". In 1986 he helped to found the International School of Film and Television in Cuba, and was chosen as first principal. He lives in Europe, and has taught in Mexico and Venezuela." IMDB. <http://us.imdb.com/Bio?Birri,+Fernando>

¹⁴Hollander, autobiography.

¹⁵Hollander, autobiography.

¹⁶Hollander, autobiography.

produced throughout her career as a film maker.¹⁷ These films are:

- *Calypso* (35mm/16mm, colour, sound, 4:29, 1955)
- *John MacFadyen (The Stripes in The Tartan)* (35mm/16mm, colour, sound, 3:30, 1970)
- *Painted Eightsome* (35mm/16mm, colour, sound, 6:16, 1970)
- *Numen of the Boughs* (35mm/16mm, colour, silent, 2:07, 1974)
- *Colour Poems* (16mm, colour, sound, 11:20, 1974 - includes *Numen*)
- *Garden Pieces* (16mm, colour, sound, 11:30, 1998)

Calypso was Tait's first hand-painted film and although it often carries the date of 1955, it was painted in Italy three years earlier. Hollander recalls:

Margaret somehow made contact with the technical guy at the office of the British Information Service in Rome. They were making an Italian version of a film called, I think, *Jamaica* in which there is a scene of a cricket match accompanied by a melange of calypso music. It was still in the days of 35mm and a print of the sound track was considered not quite good enough for the mix. This BIS man gave the print to Margaret who used it to paint her film on.¹⁸

It is no coincidence that Tait and Hollander would make a film called *Calypso* at this time. In 1950, the West Indies cricket team triumphed at Lords. The win was also a symbolic victory over their colonisers and immediately celebrated by Calypso legend, Lord Beginner who led an impromptu song, 'Cricket, Lovely Cricket' through the West-end of London. It became the anthem of 1950 and found its way to Tait in Italy who must have found its celebratory tune irresistible.

Calypso was hand painted onto clear 35mm film stock with an optical soundtrack running down the side. Greater technical detail will be given in Section Three but here I want to briefly identify the connection between Tait and the New Zealand artist, Len Lye.

Horrocks has written that Lye had experimented with scratching on the film surface in the 1920s and took it up in earnest several years later while in London. By 1934, unaware of any precedents, he was wrestling with the practical problem of finding suitable paints which would sufficiently adhere to the film stock. Finally settling on a set of 'lacquer paints', he used a variety of domestic tools with which to improvise his new art.

Seeing Lye's initial efforts, John Grierson of the GPO Film Unit, recognised the possibilities of making colourful films within an industry still largely dominated by black and white and commissioned Lye to produce "an abstract colour film."¹⁹ For

¹⁷For a more general discussion of her work until the late 1970s, see Leggett, 1979.

¹⁸Email correspondence with Hollander, June 2002.

¹⁹Horrocks, 2001, 136.

this he was paid £30 which was not enough to hire a composer. So he and a friend, Jack Ellitt, began listening to hundreds of records before deciding on ‘La Belle Creole’, a lively dance piece (at the time described as a ‘rumba’) by Don Baretto and his Cuban Orchestra. Ellitt drew up an analysis of the music and Lye made various cue marks along side the soundtrack where he painted. *A Colour Box* was completed over two months and was a striking contrast to many of the avant-garde films of the time.²⁰

Its reception was mixed at first but by late 1935 cinemas were paying to show it because of the public interest it had created. Lye went on to make several other hand-painted and stencilled films influencing another Scottish painter-film maker, Norman McLaren who, when seeing *A Colour Box* for the first time, “was electrified and ecstatic.”

I wanted to see it over and over again.... Here was the pioneer of the hand-painted film. Apart from the sheer exhilaration of the film, what intrigued me was that it was a kinetic abstraction of the spirit of the music, and that it was painted directly onto the film. On both these counts it was for me a dream come true. I had dabbled with drawing and painting on film (because I couldn’t afford a camera) and had turned out a small amount of footage but I had never succeeded in making a film. Len Lye had shown the way, and shown it in a masterly and brilliant fashion.²¹

Much has been written about both of these film makers and any detailed history of hand-painted film could go on at length about each individual’s output and working styles. Here, I want to emphasise the similarities between Lye and Tait’s first hand-painted films and that she was certainly aware of his work by the time she painted *Calypso*.

I found [Lye’s films] highly entertaining and imaginative in themselves, as well as stimulating, suggesting further development. Something about the editing to a musical beat or using a musical length to determine an in-film length was in accord with some thoughts of my own at the time... I had always enjoyed the Len Lye films which used to appear in the cinemas in the ‘30s... The use of sheer colour, screen-wide, coloured my idea of film (and perhaps colour) from then on.²²

The basic similarities between *Calypso* and *A Colour Box* are obvious: bold, vibrant colours, painted confidently with quick strokes and set to lively dance music. The movement of colour shows an attempt to synchronise with the music yet not be governed by it. Frame lines are painted in quick, single strokes and the jitter of the animation is used to an advantage, generating an energetic and playful effect. In

²⁰Horrocks, 2001, 137.

²¹Quoted in Horrocks, 2001, 145.

²²Leggett, 1979.

practical terms, both Lye and Tait were drawn to painting on film because it was cheap, not requiring a camera nor very much film stock. In this sense, both were able to experiment without too much concern for budgeting the film and it has been suggested that she saw it more as a kind of 'sketchbook', using it to test new ideas while in intimate contact with the film material.²³

Tait did not paint on film again until 1970. During that time, she would leave Italy having had a "very good time" and return to Edinburgh in 1954 where she re-established Ancona Films in a small office at 91 Rose Street. By this time, she had made five films, the three with Hollander mentioned above and *Three Portrait Sketches* (1951) and *Portrait of Ga* (1952), a touching portrait of her mother filmed while she was back in Orkney on vacation. The next twenty years were productive, punctuated with locum work until she received a tiny private income in 1960 and could finally finish with medicine altogether.²⁴ Although she had a base in Edinburgh, she went between the city, Sutherland and Orkney until the early 1970s when it became clear that she would lose her Rose Street office to redevelopment. Her time in Edinburgh is an example of her intention to remain independent just as the smaller Italian film companies had done so. Both used 16mm to their advantage as the cheaper production costs meant greater independence from the industry. In 1995, she wrote a lengthy letter about her choice of working in 16mm. She argued that 16mm film was "the answer" to her desire to work independently ("independent of what?" she once noted, reflecting on the state of the Scottish film industry), partly influenced by the efforts of the American 'underground' films and the pre-war avant-garde from Europe. 16mm afforded her professional quality on "laughable budgets". She defended the format by arguing that much of television was shot on 16mm and was thus well supported by the industry. Some services were even available for 16mm before 35mm, in particular magnetic sound which she took advantage of frequently.

Another thing about 16mm was that you could get film stock in 16 that you couldn't get in 35. 1) Colour reversal; Kodachrome gave beautiful colour. I used it for *Portrait of Ga*, *Orquill Burn*, *Happy Bees* and *The Leaden and The Echo*. 2) And there was black and white reversal too, which gave lovely rich blacks and good gradation. That was used for *The Drift Back...* 3) Ilford at the time sold b/w neg-pos stocks which I used a lot. And I think there was a greater variety there in 16 than in 35. I liked to use both HPS, a very fast and quite grainy one and PanF, quite the opposite, fine grain and slow. *The Big Sheep* is done entirely in HP5 & PanF, *Where I Am Is Here*, largely so but using also an intermediate speed. *Hugh MacDiarmid* is on Kodak b/w neg/pos.²⁵

²³Leggett suggests this having had conversations with Tait in the 1970s. However, she would later deny this saying, "the hand-painted dance films were made as films not as sketches." (Letter to Curtis, 1995).

²⁴Pirie, letter, 2000.

²⁵Letter to David Curtis, 3rd February, 1995.

2.3 *John MacFadyen and Painted Eightsome*

Started in 1955 and completed in 1970, *John MacFadyen* and *Painted Eightsome* were, like *Calypso*, made by painting onto clear 35mm optical film stock. Neither of these films has received much attention and in a September 1982 list of her festival screenings, *Painted Eightsome* had shown just once at the Edinburgh International Film Festival, 1971. *John MacFadyen* is not even listed. Judging from the elements donated to the SFTVA, I suspect that after some initial interest in showing the two films in the early 1970s, Tait directed her energy and finances towards a new project and the exhibition of these two films was largely abandoned. Nothing has been published which discusses the two 1970 hand-painted films but Mike Leggett briefly lists them in his unpublished article based on conversations with Tait in the 1970s. The following are the only two quotes from Tait regarding these films that I have been able to find.

On *Painted Eightsome*:

An eightsome reel played by Orkney Strathspey and Reel Society, recorded in about 1955/6, later transferred to 35mm optical stock with clear picture and gradually painted over the years. Eights of different things - figures, antlers, or sometimes just blobs in tartan colours - dance their way through the figure of the reel.

On *John MacFadyen*:

Made over the same period of time and by similar methods to *Painted Eightsome*, the music being a march tune.

These brief descriptions (and the film elements themselves) suggest that Tait began painting them shortly after completing *Calypso*, using the same techniques of painting onto clear optical stock with a soundtrack already visible down one edge of the film. *Painted Eightsome* and *John MacFadyen* are very much alike. Both have similar lively soundtracks of traditional Scottish dance music. Both are painted with several deep, rich colours - reds, greens, blues, purples, yellows - and typically have a washed background in one or two colours with dancing figures in the foreground. *John MacFadyen* begins with a tartan background with painted loops roughly dancing in time to the jig. The dancing line figures reoccur throughout both films, sometimes one, sometimes several dancing together hand-in-hand. *Painted Eightsome*, the longer of the two films, has birds flying above ocean waves and it appears as if every movement is in some way related to the lively music that persists throughout the two films. Towards the end of *Painted Eightsome*, a starfish and a linked chain are included among the dancing shapes. In a filmography drawn up for the release of *Blue Black Permanent*, both *Painted Eightsome* and *John MacFadyen* are listed, though hand-written notes alongside each film indicate that no prints were available. Of all the titles discussed in this paper, these two appear to have remained out of circulation from shortly after they were completed and I suspect her interest in a new kind of technique had something to do with this.

2.4 *Numen of The Boughs/Colour Poems*

During an interview for the 1983 Channel Four arts programme, *Eleventh Hour*, the subject of her hand-painted films was brought up, to which she replied:

Yes, I had done a bit, before, in sort of dance films, but in *Colour Poems* I was trying to do it rather differently. Instead of the usual kind of animation, I was doing the opposite, in a sense. I was trying to keep the picture as still as possible, and get the opposite effect, you know, of Duchamp's 'Nude Descending A Staircase', where you see several phases in one picture. I was trying to keep the picture still, over a number of frames, but just allowing for the natural shiver that there's bound to be; and this was to illustrate a slightly shaky memory I had, of what of course in world terms was a very significant time in this century, the time of the Spanish Civil War.

It seems that having spent fifteen years painting *Eightsome* and *John MacFadyen*, Tait had developed both her technique and purpose behind labouring over each frame individually. *Numen of The Boughs* is an attempt at expressing something quite apart from the energy of movement and dance found in the earlier films. It was an experiment from which successful portions were incorporated into *Colour Poems*. The two-minute roll of film, painted without reference to a soundtrack, is almost entirely composed of black and white hand-drawn or scratched sequences. There is some colour in the original roll which has been applied over the scratches, but subsequent prints Tait had made were reproduced in black and white. The version which was incorporated into *Colour Poems* is black and white although colour was applied by hand to the negative over the animated sections.

Numen of The Boughs was never meant to be projected for the public although it was very successfully incorporated into *Colour Poems*, one of Tait's most often screened films. As we have seen, Tait was concerned with expressing her feelings about the Spanish Civil War (1936-1939) but claims that her memories of it in the early 1970s "were simply of newspaper reports and of some people who had gone away to it and had come back...I couldn't quite take it all in at all, really."

So between Sorley MacLean's poem about not having gone to the Spanish Civil War, and something of Lorca - I got the title from this book, 'El Numen de las Ramas', which I translated as 'Numen of The Boughs'. I don't know if it is the correct translation. I had started a poem in words and I tried to complete it on the film; that was what I was doing.²⁶

This poem is read aloud over the opening hand-drawn sequence of *Colour Poems* and because it describes quite clearly the feelings Tait had during the making of *Numen* and *Colour Poems*, I have reproduced it overleaf:

²⁶ Margaret Tait: *Filmmaker*, 1983.

Well, yes
I do remember
the young men
going off to fight in Spain
but not Sorley McLean
not Sorely McLean in his pain
then them coming back changed
and yet not changed enough
for my notion then
of what war might be
frozen soldiers of the plains
stiff in trees
in photographs
the black showing through the thin snow
and the hard plain of Madrid
as shown to us in newsreels
stick in my vision
and click now
with McLean's poem 'to Ewir'
and Lorca's 'Numen of The Boughs'
busy with studies then
and enjoying ourselves
How much did we notice?
I remember the look of young men
coming back who'd been in Spain
and wondering about them
What took them there?
What brought them back?
What had they learned?
What sad knowledge was forever more
buried deep inside them?

In festival programmes, *Colour Poems* usually carries the subtitle, 'nine related film poems'. Over twelve minutes, the film has nine titles: Numen of The Boughs, Old Boots, Speed Bonny Boat, Lapping Water, Incense, Aha, Brave New World, Things Found and Terra Firma. Much of the hand-drawn material is in the first section,

although there are other short animated ‘refrains’ throughout the film. Clearly the notion of memory is important to the film as is observation “and the subsuming of one to the other.”²⁷

Leggett has quoted Tait describing the film as “nine linked short films, about memories which affect chance observation. A poem started in words and continued on in images; part of another poem read as an addition to the picture; some images formed by direct on-film animation, others ‘found’ by the camera.”²⁸ He has also noted that the film evokes distant causes with the “sturdy present” of contemporary Orkney. “Optimistic images of freshly painted steamers, and the bustle of re-constructive activity in full colour contrast distinctly with the grainy black and white greys of *The Drift Back* (1956).”

Colour Poems is a film that draws on familiar observations in rich colour, intercut with the harder almost monochrome hand-drawings in black ink. Indeed, unlike the earlier hand-painted films, the drawings do not dance or wriggle energetically but just as she intended, they ‘shiver’, seemingly constricted by the frame or perhaps the window of time. Tait has suggested that by cutting colourful observations of the present with these sketches of the past, the memories keep reverberating back, never quite disappearing. “Out of one’s own memory and thought one then finds (or arranges) the external scenes which can be filmed and made into something else again.”²⁹

By the year *Colour Poems* was finished, Tait had made twenty-two short 16mm films. Of those, the 1982 festival screenings list I referred to earlier shows that nine films, including *Colour Poems*, had shown at festivals, mainly the Edinburgh International Film Festival and one or two other experimental or avant-garde film festivals. From her letters to David Curtis and draft scripts of the *Eleventh Hour* programme, there is also evidence to suggest that she showed her films to local audiences. Avant-garde film makers’ interest in her work increased after Malcolm Le Grice, reviewing the Festival of Independent British Cinema in Bristol, 1975, claimed that:

The main surprise and delight came through seeing the work of Margaret Tait for the first time... Working in a direction which received no echo of support in the films of her generation, she has developed her ideas in relative isolation...she must be considered as the only genuinely independent experimental mind in film to precede the current movement... Her work is sophisticated...she is no Primitive...deserves a full critical review...³⁰

This attention was overdue, yet Tait was reluctant to accept the London Film Co-op’s adoption of her as an ‘experimentalist’. Pirie has written that “she was too well-informed about developments in film practice over the decades, but understood

²⁷Programme notes by Tait for an unidentified German screening.

²⁸Leggett, 1979.

²⁹Pirie, letter, 2000.

³⁰Pirie, letter, 2000. Original article written for *Studio International*, May-June, 1975.

the need of others to accept the comfort of such designations.”³¹ In fact, Tait herself has also said that:

I never describe my work as ‘avant-garde’. I don’t see that it’s a term one can use of oneself anyway. How can anyone say such a thing, of themselves? Besides that, there’s something too limiting about the idea of Avant-Garde - as if at all costs you must be making innovations. Cinema itself is an innovation of this century, and within the mainstream of it the most astonishing things have been achieved. It bowls me over, it really does.³²

As we have seen, despite her life-long practice in short, 16mm film making, Tait was always interested in making feature films. Although a discerning critic of commercial cinema, she very much wanted to express her own ideas and aesthetic in this form, eventually doing so in *Blue Black Permanent*, a film which was first conceived in the 1940s and only came to fruition after the establishment of Channel Four in the 1980s.

2.5 *Garden Pieces*

Tait’s last effort to include hand-painted or drawn elements was a twelve minute film entitled *Garden Pieces* (1998). There, she adapts the technique of drawing on the film surface used in *Numen of The Boughs*. With this film, however, dense solid colours were added during printing to produce a very successful combination of colour shifts and line drawing interwoven into a live action film shot around her new house in Orkney. In 1994, Tait and her husband had moved to another house in Orkney which had a small quarry beside it. They saw this place as a ‘grove’, “a place for meditation and remembering.”³³ There, she shot material for *Garden Pieces* which was finished in the summer of 1998. In a letter to David Curtis, she stressed how much money the film was costing her and that she would need to recoup some of it through sales of prints or long-term rentals. She wrote she just couldn’t “provide prints at my own expense anymore.”³⁴ mentioning that about £500 would be appropriate for a sale. In August 1998, she wrote again to Curtis to tell him she’d “got this little film finished at last”, writing that it was due to be screened in the South West and hopefully in London. By October, she had news for him that it would be screened in Bristol, Munich and Berlin. By this time though, her health was failing (she had previously undergone major surgery and radiotherapy in the 1980s) and she did not travel with the films.

Garden Pieces is composed of three short ‘film poems’ under one title. They are ‘Round The Garden’ (‘right round and round again’), ‘Garden Fliers’ (‘flighty cartoon and a stunner of a piano piece’) and ‘Grove’ (‘grave and sonorous’).³⁵ The film begins with Tait’s voice-over introducing the titles of the three sections. ‘Round The Garden’ is a series of clockwise pans from a tripod placed in their sunlit garden.

³¹Letter, 2000.

³²Draft script for *Margaret Tait: Filmmaker*, 1983.

³³Pirie letter, 2000.

³⁴Letter dated 14th May 1998.

³⁵Descriptions are from the publicity flier Tait had made.

‘Garden Fliers’ is almost entirely animated ink drawings on a solid background of colour. Like *Numen*, the drawings ‘shiver’ yet there is also an element of ‘dance’ as in her earlier hand-painted films - butterflies, birds, flowers, circles and stars move quickly to the music of the piano. The colours shift suddenly from dense purple to vivid green, then to a rich blue, solid red, back to green and then pale blue, and so on. Often with each change in colour, a new shape appears such as leaves with green and flowers with red, though this does not appear to be a strict rule. Finally, at the end, the animation cuts back and forth to a poppy head, ending the second section before Tait’s voice introduces ‘Grove’. The third film is similar to the first yet this time the location is the quarry. The camera follows the light on trees, bushes and shrubs and the area is awash with bright, vibrant green foliage. The final shot is of a cat, moving away.

3 The Preservation of the Hand-Painted Film Elements

3.1 General Introduction

Having introduced both Margaret Tait and the hand-painted/drawn films held at the Scottish Film and Television Archive, I shall now move on to the main Section of this paper which shall discuss the film materials themselves and present conclusions on possible preservation paths the Archive might consider when working on the collection. The entire project has been my own undertaking and I am grateful to the Archive for allowing me to conduct my research on what is currently a collection ‘closed’ for preservation.

3.2 Notes On Research Methods

My research began in earnest during a work placement at the Scottish Film And Television Archive during April and May 2002. Prior to this, in November 2002, I had been to the British Artist’s Film & Video Collection (BAFVC) at Central Saint Martins College of Art and Design to go through their Margaret Tait files. With a better idea of how this paper would be written, I returned to Saint Martins again in June 2002. The BAFVC holds several of Tait’s films on video and has a unique collection of paper documents, largely consisting of correspondence between David Curtis and Tait since the early 1980s.

The SFTVA has also begun collecting documents relating to the Tait collection which includes some recent correspondence from Tait’s husband, a copy of the BFI’s database records relating to Tait, and other miscellaneous items. I did not contact Pirie during my research since the Archive had already approached him concerning the technical details of Tait’s film making and could answer any initial questions I had for him. It is the Archive’s responsibility to engage in any ‘real-world’ work on the films and I hope that this paper might provoke further questions which they

will then put to Pirie.

Although I have only discussed five complete films up to now, there are twenty-five cans in the collection relating to these titles and I will address each one below. My method of working with each can was fairly systematic: Working at a winding bench, I carefully ran each element through once and noted details such as stock dates, codes, splices, and condition. At all times, I had a video camera positioned beside me at the bench in order to make an accurate record which I could review after I had left the archive. I also made written records and drawings of the film stock for a quick reference later. Having looked at each element in the can, I photocopied any documentation included and also the can label. Having done all of this, I compared my observations with the Archive's Technical Records of which I possess a full printed set for each can.

Besides technical books and articles I have used, I contacted several professionals who are known experts in film printing, digital restoration and colour dyes and presented my observations and queries to them. I was also able to find and contact Peter Hollander in the USA who had been out of touch with Tait for many years.³⁶ My correspondence with him turned out to be critical to my understanding of the dyes Tait used. With that understanding, I searched for information on the appropriate dyes and eventually contacted a Histotechnologist who had created an excellent record of dyes used in medical procedures and published it on the Internet. At all times, people were intrigued by the bizarre turns my research was taking and were eager to help me in my detective work.

3.3 Summary of Film Elements and Condition Report

Tait Collection Acquisition No. A1060

3.4 *Calypso* (1952-7)

- Can 37: Roll 1: Original 'Mezzo-bande' optical soundtrack, 17.5mm. Roll 2: Hand-painted master positive, 35mm, Comopt, 404ft, 1952. Roll 3: BBFC Certificate title, 35mm, 1957.
- Can 38: Reversal reduction print from original, 16mm, Comopt, 156ft, 1958.
- Can 39: Colour print of can 37#2, 35mm, Comopt, 404ft, 1958.

3.4.1 Summary of Film Elements and Condition³⁷

- Can 37, Roll 1 is the original Italian soundtrack given to Tait in 1952. The stock is cut-down 35mm optical stock, commonly used in Italy at that time for recording optical soundtracks in the process of 'building up' multiple tracks.

³⁶I am pleased to report that this correspondence has led to Hollander donating his original 16mm copy of *Calypso* to the SFTVA.

³⁷All summaries of condition draw from both the Archive's Technical Record and my own observations.

The stock is marked 'FERRANIA S.A.V', indicating the Italian film stock manufacturer, Ferrania. Edge marks are in black.

- Can 37, Roll 2 is the original film painted by Tait in 1952 with assistance from Hollander. It is a 35mm black and white Kodak optical stock printed from Roll 1. Tait has painted onto the emulsion side of the clear stock with dyes of several different colours (see below for lengthy discussion about the dyes used). The film stock has a light but thorough covering of fungus throughout as do many of the films in the collection. The emulsion is badly cracked and the film appears to be shrunk. British Kodak Safety stock dated 1952. Sound quality is good.
- Can 37, Roll 3. Original black and white BBFC, Certificate 'U'. Verification of this can be found on the BBFC online database. British Kodak Safety Stock, dated 1957.
- Can 38 contains a 16mm Kodachrome reversal print direct from the 35mm painted original. Colours are relatively close to the original although they have suffered somewhat during the printing and possibly over time. On the whole, the background washes of colour have become fainter and there is a lack of definition between the blue and green. The film is scratched throughout including tramlines. There is some emulsion cracking and fungus. The sound is on a variable density optical track and poor. The can also contains a card: 'FILMS and BALLADS in the Temperance hall, Kirkwall on Monday, 29th October at 8pm. ADMISSION 2/6 (Inclusive of Duty)'.
- Can 39 is a print from the hand-painted original (Can 37 #2) onto British Kodak stock dated 1958. It also includes the BBFC Certificate which can be dated to 1958. The colours are inverted from the original (i.e. the clear background is now a black/magenta) and are predominately magenta and a yellowy green. The film is acetic and shrunk in parts as well as having fungus and some abrasions and perforation damage. All the vivid colour of the original has been lost.

3.4.2 Notes on The Preservation of *Calypso*

Hollander has said that the original film was never meant to be projected and that 16mm reversal reduction prints (like #38) were the intended projection medium.³⁸ He is in possession of one of these prints, others were made at the same time and Tait had one made in 1958. However, this still leaves the 35mm print in can #39 which appears to contradict Hollander's recollections. He has said that they had no access to a 35mm system in Italy so it is possible that Tait had a print made as an experiment once she returned home and had access to the equipment. The print is completely different to the hand-painted original and the Kodachrome print yet it does have a BBFC leader and shows signs of possible projection wear.

³⁸Email dated 2nd August 2002.

The hand-painted original was painted with water soluble dyes and has fungus and cracked emulsion. Normal cleaning and printing methods which commonly use the chemical Perchloroethylene would almost certainly remove the colour dyes. On a recommended alternative cleaning method, see below.

3.4.3 On Dyes

Researching the dyes used by Tait has been the most fascinating aspect of my research. I am now quite certain that the dyes Tait used to paint *Calypso* (and *Painted Eightsome* and *John MacFadyen*) are dyes used in the profession of Pathology or more precisely, Histology. These are dyes that are commonly employed as stains in biological laboratories. I have come to this conclusion due to the following reasons:

- Mike Leggett's conversations with Tait in the 1970s show that at that time she referred to the dyes as 'aniline dyes'.
- Len Lye is known, for example, to have used 'aniline dyes' to paint on film. 'Aniline dye' is also a commonly used term in the tinting of early silent films. Not all these dyes were the same or even similar. The term, 'aniline dye' is used generically to refer to an 'artificial' or 'synthetic' dye.

Because the first artificial dyes were produced from aniline all of this class are often called "aniline dyes," although there are now a large number of them which bear no relation to this compound and are not derived from it. Therefore the term is now quite largely being replaced by the more correct expression "coal-tar dyes," since all of them are made by chemical transformations from one or more substances found in coal-tar.³⁹

- Hollander recalls the dyes being "medical dyes".⁴⁰ As I have noted, 'medical dyes' refer to dyes used in Pathology which are also generically referred to as 'aniline dyes.'
- Tait was a qualified Doctor. She would have been aware of such dyes, had experience with their medical application and would have known how to obtain them.

Having come to this conclusion, I searched for information on medical stains. A good reference is available on the Internet⁴¹ and referred me to a classic text, *H.J.Conn's Biological Stains*. It is an overwhelming topic for the inexperienced so I contacted Bryan Llewellyn, a Histotechnologist⁴² who was able to offer advice.

³⁹Lillie, 1969, 15.

⁴⁰Email dated 6th July 2002.

⁴¹<http://members.pgonline.com/~bryand/StainsFile/>

⁴²"Histotechnology is a subspeciality of Medical Laboratory Technology... Histotechnologists work in laboratories that look at animal and plant tissues and organs (including human tissues) with a light microscope. We do the preparatory work necessary so that the material can be examined by other scientists. The most common use is in health care, where it helps a pathologist determine whether a patient has cancer. It is also used in veterinary medicine, plant pathology and in various kinds of research." [<http://members.pgonline.com/~bryand/StainsFile/histek.htm>]

Acknowledging my subjective interpretation of the colours Tait used to paint *Calypso* and that they may have changed with age, I described them to Llewellyn based on the SFTVA Technical Records and my own observations: black, warm ultramarine blue, green-blue, acid lemon yellow, warm yellow, purple, vivid viridian-green, bright leaf green, pink-alizarin red, red, and green-brown. I also told him that the dyes were probably obtained in Italy around 1951. From this, Llewellyn suggested that the following may have been used by Tait:⁴³

- Black - Amido black 10B, sudan black B. If it is pure black it may be India ink.
- Warm ultramarine blue - Aniline blue, or one of its constituents.
- Green-blue - Alcian blue.
- Acid lemon yellow - Picric acid, martius yellow, metanil yellow.
- Warm yellow - Orange G.
- Purple - Methyl violet.
- Vivid viridian-green - Fast green FCF.
- Bright leaf green - Light Green SF yellowish.
- Pink-alizarin red - Phloxine, rose bengal, mercurochrome or another homologue in this series. It could even be alizarin with some calcium added.
- Red - Acid fuchsin, basic fuchsin.
- Green-brown - This presents a difficulty. There is only one brown dye that comes to mind - bismarck brown - but that is pure brown. Perhaps this is a mixture of two dyes, mostly brown with a touch of some green dye.

Llewellyn's last comment highlights the greatest problem of subjective descriptions of colour: Tait may have modified the dyes by mixing them. He suggests first contacting a histology laboratory and asking for a small amount of each dye they stock. With these, solutions could be made up and used to paint on a test piece of film, comparing the colours and checking for synonyms and homologues in common use in H.J. Conn's text. Having done that, a more accurate analysis of the dyes used by Tait would have to be done using a spectrophotometer; the former subjective test results would then be used to broaden an understanding of these laboratory tests.

A spectrophotometer is the preferred method of testing dyes over chemical analysis because the detailed chemistry of some dyes is obscure and "the reactions are often complicated by adulterating dyestuffs in such a manner as to preclude entire reliance on rigorous chemical methods. Often a slight change in the arrangement of

⁴³Email dated 15th July 2002.

atoms within the molecule will make a marked change in the nature of the dye, while such a minor change in structure is not always readily detected by chemical means alone.”⁴⁴ A spectrophotometer would reliably detail the characteristic absorption spectra of each dye.

Quantitative as well as qualitative data may be obtained by the spectrophotometer; from the combined results nearly all dyes, even though differing from each other only in very minor particulars of chemical structure, may be easily differentiated. This method is not only rapid but is also convenient.⁴⁵

Recently the SFTVA has carried out a number of tests with several different paints, dyes, and inks but were unable to reproduce *exactly* the same effect Tait had achieved using the ‘aniline’ dyes. Usually, because of the transparency of the dyes, colours which seemed similar to the original under reflective light were quite different when shown with projected light. In contrast, the method of testing by spectrophotometer “depends upon the fact that any coloured substance absorbs light of certain definite wavelengths and transmits the rest.”

The absorption spectrum is essentially the inverse of that which is transmitted. Therefore the colour of light which reaches the eye after transmission through a coloured substance is complementary to the colour of light absorbed by that substance. A violet dye, for example, appears that colour because of its predominant absorption of greenish yellow light. The absorption maximum is quite characteristic of any dye; any two dyes having the same absorption curve (a somewhat rare occurrence) are of essentially the same colour.⁴⁶

The basic advantage of the spectrophotometer is fairly obvious but where its use is particularly advantageous is for analysing dyes which may be impure mixtures of more than one dye. Whereas the eye is unable to distinguish between, say violet and the same mixture of red and blue, this heterogeneous character of the mixed dyes can be easily identified with the spectrophotometer because it is able to reveal differences in the character of the light absorption of each dye used.

Typically, the dyes used for medical applications can be categorised by their solubility in water and alcohol. ‘Alcian Blue’ for example, perhaps the ‘green-blue’ noted in the Technical Records for *Calypso*, has a solubility in water of 9.5% at 15° C and a solubility in alcohol of 6.0% at 15° C.⁴⁷ Such data would be useful when determining how the film might be cleaned. The SFTVA have tested the water solubility of small samples of dye from *Calypso*. Dye that had been brushed into the perforation area was rubbed with a damp cloth which removed the dye, thus proving that particular dye was water soluble. In all probability, this will be typical

⁴⁴Lillie, 1969, 47.

⁴⁵Lillie, 1969, 47.

⁴⁶Lillie, 1969, 47.

of every dye used because unlike Len Lye, Tait does not appear to have rubbed off the excess dye after she had painted and applying water to it today would remove the surface material and thus the density of the dye.⁴⁷ Having the results from tests using a spectrophotometer would, of course, make this test much more qualifiable.

3.4.4 On Mould

The treatment of mould on photographic materials is a widely discussed area in the Archiving profession.⁴⁸ When dealing with mould in a collection, three basic issues must be addressed:

1. The health and safety of staff.
2. Arresting the further growth of the mould.
3. The removal of mould from the collection altogether.

The mould on the Tait collection is quite widespread and appears as a fine white-grey coating over the film emulsion. Fungi thrives by feeding on the gelatine in the emulsion causing permanent damage to its transparency. Read & Meyer describe gelatine as organic proteins found in animal skins and bones and when solidified into a gel provide flexible and consistent support for the photographic silver bromides. They also contain active impurities which improve the light-sensitivity of the metallic salts.⁴⁹ It is thus incidental that they also nourish and support fungus and bacteria. A severe case of fungus (which I don't think the Tait films suffer from) can easily gouge troughs in the emulsion surface resulting in a visible etching which may consequently show up on duplications. Because mould affects the physical and chemical structure of the film it can also alter the colours of dyes and even if the covering of mould on the Tait films can be removed, it is likely that the colours would already have been affected. From my observations, however, the colours in the Tait films remain bright and vibrant and do not seem to have altered considerably. Once the dyes are known, this can be verified.

Mould germinates and grows when the relative humidity reaches or exceeds 70-75 percent and remains so for several days.

High temperatures, poor air circulation, dim light, and accumulated grime assist and accelerate the growth of mould once it has germinated, but only high relative humidity and moisture contents of the substrate can initiate and sustain mould growth. If the relative humidity drops below 70 percent and the materials lose their high moisture content to the atmosphere, these moulds will stop growing and become inactive or dormant, but the spores will remain viable on the host material. They

⁴⁷From correspondence with Paul Read, 6th July, 2002.

⁴⁸The best paper and one I have drawn from here is *Managing A Mould Invasion: Guidelines for Disaster Response*. A thorough survey of mould in an archive collection far outweighs the brief discussion I have been able to include here.

⁴⁹Read & Meyer, 2000, 13.

will become active and begin growing again if the relative humidity rises.⁵⁰

This explains why presently the fungus on the Tait films appears to be ‘dusty’ and inactive since the removal of the collection from Tait’s Orkney studio to the controlled storage facilities of the SFTVA would have affected the conditions under which the mould was thriving. The cool storage and low humidity of the Archive is ideal for keeping mould dormant.

Although Read & Meyer provide a brief discussion on the common treatment on films with mould, much of it is quite inappropriate for the Tait films because of the dyes she used. They recommend inspecting the mould growths under a microscope using a needle to probe the image area to see whether the mould is on or below the surface of the film. This could certainly be recommended with the Tait films as would consultation with a Mycologist to identify the mould species present. Next, if the emulsion is firm, they suggest that the film should be rewashed which usually removes surface growth and cleans out any grooves cut by the fungi. Clearly this could be disastrous for the Tait films since it is quite certain that some, if not all, of the dyes are water soluble. The next stage they discuss is minimising the effects of mould during printing. They write that wet-gate printing would have the same effect it does on scratched film: filling in the grooves with the liquid, Perchloroethylene which has a similar light refractive index as film. In other applications, Perchloroethylene is mainly used as a solvent and its use with the Tait films could not be recommended at this stage nor any other wet method of cleaning or printing. Finally, Read & Meyer discuss the prevention of further growth using biocides. Again, these are liquid-based and cannot be recommended at this time.

The use of biocides relates to the first of the three stages listed above. Much has been written about the treatment of mould in a collection and repeatedly, health and safety warnings are first and foremost included.

There is no easy way of responding to mould outbreaks on collection materials. Because the metabolism of fungus is much like our own, what is deadly for mould can also be dangerous for us, e.g., ethylene oxide effectively kills mould but is not safe for humans. And because the presence of mould can also be harmful to people, knowledge of and adherence to safety precautions is imperative.⁵¹

The SFTVA is fairly well equipped to deal with fungus on films and correct safety measures could easily be adopted. Films in the Archive infected with fungus are isolated to particular viewing machines and work spaces are cleaned after these films are handled over them. Although suggested by Read & Meyer, biocides are generally not recommended by many Conservators because of the potential risk they impose to staff. Their use can also be quite restrictive and highly regulated. Read & Meyer do state that anyone handling infected films should wear gloves and a full nose and mouth mask with a filter capable of trapping particles down to 4 microns.

⁵⁰Managing a Mould Invasion: Guidelines for Disaster Response, 1996, 1.

⁵¹Hilary A. Kaplan, American Institute for Conservation.
<http://palimpsest.stanford.edu/byauth/kaplan/moldfu.html>

Movement of the films should be kept to a minimum to avoid infecting other areas of the archive and should remain in their container until needed. In cases where biocides are used, recommendations for handling and use should be followed, in particular, the provision of adequate air extraction.

By far the most popular choice for the removal of surface mould on delicate materials is the use of a special vacuum⁵² fitted with a HEPA filter. This method is simple to carry out and relatively safe and avoids spreading or further embedding the mould into the film emulsion. With this method, the surface of the film is simultaneously brushed and vacuumed. The HEPA (High Efficiency Particulate Air) filtration is certified to trap 99.97% of all airborne particles larger than 0.3 microns which includes fungi,⁵³ ensuring that the mould is not redistributed within the Archive and can be emptied outside. Although great care should be taken when vacuuming, once tests with a soft camel-hair brush have been carried out they are likely to show that the films can be brushed quite firmly. Vacuuming should be alternated with aeration provided the air is below 60 percent relative humidity. Good ventilation and air extraction should obviously be a priority, too. The SFTVA already has a cleaning room with exceptional air extraction.

Clearly, the issues of mould and dyes are of primary importance to the preservation of all the hand-painted films. Here I have gone into just the necessary detail to indicate what the SFTVA might attempt when they approach the restoration of the Tait films. Although it is perhaps an unusual procedure, the hand-painted films are not only unique to the Archive's collection but also unique objects in themselves and traditional restoration and preservation techniques cannot be entirely relied upon.

To summarise: in order to make good preservation copies, the films first need to be cleaned. To safely clean the films, the particular types of dyes applied should be understood. Meeting both these prerequisites, will establish a reliable colour reference necessary for printing. Likewise, successful, restorative printing depends on knowing which dyes were used and on successfully removing the mould. Failure to remove the mould may affect whether the dyes can be accurately determined. Because of the centrality of these two issues, consultations with a Mycologist and Histotechnologist are highly recommended.

3.5 *John MacFadyen/Painted Eightsome (1955-1971)*

- Can 71: Hand-painted original, Comopt, 35mm, 880ft. 1955.
- Can 72: Negative soundtrack, 35mm, 880ft. 1955.
- Can 73: *John MacFadyen* print, Comopt, 35mm, 316ft. 1971.
- Can 74: *Painted Eightsome* print, Comopt, 35mm, 564ft. 1971.

⁵²For example, 'Conservac': <http://www.conservation-by-design.co.uk/sundries/sundries43.html>

⁵³A detailed report on HEPA filtration can be found here: <http://www.llnl.gov/esh/hsm/doc12.05/doc12-05.html>

- Can 75: *Painted Eightsome* pos. reduction of #74, Comopt, 16mm, 245ft. 1969.
- Can 76: B&W reduction negative from #71, Comopt, 16mm, 358ft. 1968.

3.5.1 Summary of Film Elements and Condition

- Can 71. Combined hand-painted original of *John MacFadyen* and *Painted Eightsome*. Technically similar to *Calypso* probably using ‘medical dyes’. The colours are also vibrant and translucent. Brush strokes extend into the perforation area. Short title sections at head and tail are on silent Ilford stock. The main section of the roll is on British Kodak black and white optical sound stock (probably 5372) dated 1955. Marks and scratches throughout as well as fungus. Tape repair over several torn frames at the beginning of *John MacFadyen*. The two films were painted consecutively on one continuous roll of stock as indicated by the edge numbers. A hand-painted black mark can be seen every 18 frames on *John MacFadyen*. On *Painted Eightsome*, there is a painted edge mark along three frames approximately every nine frames. These markings are sometimes numbered in Roman and Arabic numerals. The roll has hand-drawn frame lines and occasionally the paint brushes over into the variable density optical soundtrack. The head of the roll has handwritten laboratory marks: ‘MISS TAIT ROLL 289 14/12/55’ and ‘SOUND NEG’.⁵⁴ Similarly, the tail has ‘TITLE YMD DATE ROLL MISS TAIT’ written on it. The can label is misleading as it reads ‘16mm Eastmancolour Positive EIGHTSOME 620FT.’ Another small hand-written label shows that the two films were ‘ANCONA PRODUCTION NUMBERS 19 20’. Although the label is not for this particular element, it suggests that Tait may have had a 16mm colour positive print of *Painted Eightsome* made. This print, if it still exists, is not part of the SFTVA deposit.
- Can 72. Variable density optical soundtrack on British Kodak black and white optical stock (probably 5372) with date marks for 1955. Head section is mute. Fungus suspected. Can labels read, ‘NEG SOUND TRACK 35MM’, ‘16mm Eastmancolour Positive EIGHTSOME TRACK 620FT.’ Here, the same label as #71 has been used by Kay’s Laboratories which suggests they may have used the labels arbitrarily and that a 16mm colour positive never existed.
- Can 73. Print of *John MacFadyen* from #71 on British Kodak colour stock (5385) with date marks for 1971. Colours are the opposite of #71. Can label reads ‘JOHN MACFADYEN - THE STRIPES IN THE TARTAN’. Fungus present.
- Can 74. Print of *Painted Eightsome* from #71 on British Kodak colour stock (5385) with date marks for 1971. Overall, this is a very dark print. Can label

⁵⁴I have distinguished hand-written label information in uppercase and printed labels in normal case.

reads 'PAINTED EIGHTSOME 35MM COLOUR'.

- Can 75. 16mm reduction print from #74 on reversal print stock, possibly Eastman 7387, dated 1969. Further degradation in colour and contrast. Dark and indistinct picture. Fungus present. Can label reads '8 SOME EASTMAN COLOUR REDUCTION'.
- Can 76. Duplication onto Kodak 16mm black and white dupe-negative stock. The result is a version which has the same relative tone values as the hand-painted original (i.e. The background is clear and the dancing motifs are likewise dark). It is heavily scratched with persistent tramlines. The emulsion is cracked throughout and fungus is clearly present. Stock has 'DUP' printed on the edge throughout. This is a very low density negative. The film is in a cardboard box rather than a can which is labelled 'SCOTTISH ARTS COUNCIL, EDINBURGH. SCOTTISH FILM WEEK' It also contains two laboratory 'printing information and exposure' cards for 'PAINTED EIGHTSOME' (probably for #74 and #75 - the print job going under one title). Kodak 5385 stock (which is a 35mm stock and couldn't possibly be for this roll) is clearly indicated on both cards. One has a printer correction of 'RGB DOWN 3' and the other has a printer correction of 'MUTE PRINT FROM HEAD CELL TO EMULSION. TRACK EMUL TO EMUL'.

3.5.2 Notes For The Preservation of *Painted Eightsome* and *John MacFadyen*

Both films were painted shortly after *Calypso* and both appear to use the same film stock and similar dyes as the earlier title. Likewise, these titles suffer from fungus and I recommend testing the fungus and dyes in the same way as *Calypso*. Like *Calypso*, a 35mm print has been made of each but there are no 16mm Kodachrome reduction prints from the original. The colour reduction print #75 is from #74 and thus directly opposite the hand-painted original as are #73 and #74. The roll in can #76 seems to be the earliest attempt at printing the original film and appears to have been used by the Scottish Arts Council for 'Scottish Film Week'. The film is in a box rather than a can and identifies the contents as 'THE JIGGANN B/W'. I am inclined to think that this was made for a special purpose and probably not a direct part of the creative process. The 35mm prints #73 and #74 are visually, significantly different than the original, being darker overall with deeper, richer colours. Having finished both films long after making the 35mm print of *Calypso*, Tait would have understood the likely results and I can only assume that #73 and #74 are the intended finished films. One way to confirm this would be to look at the tartan patterns at the beginning of *John MacFadyen* and judge whether they do in fact resemble any known pattern, an area of research I have not yet been able to go into.

I shall offer possible printing recommendations for all films later in the paper.

3.6 *Numen of The Boughs* (1973-74)

- Can 48: Hand-scratched/painted original, silent, 35mm, 191ft., 1974.
- Can 49: Colour print of #48, silent, 35mm, 191ft.
- Can 50: 3x B&W Fine Grain Dupe Positive reduction prints of #49, silent, 16mm, 74ft., 1974.

3.6.1 Summary of Film Elements and Condition

- Can 48. Scratched/painted original film. It appears to be a series of experiments, some of which were later incorporated into *Colour Poems*. The initial stock used is black, processed leader and from 92ft., clear optical sound stock. On the black stock, drawings are scratched/etched into the emulsion while on the clear stock, dyes and black ink have been used. Colour has also been applied over some sections of scratching. Frame lines are also scratched/drawn except for the latter part of the roll where they are absent. There is fungus, some scratches, and emulsion cracking. The film also appears shrunk. Inside the can is an exposure chart for the three elements in can #50. Notably, it says 'REDUCTION 3x 85' 16MM B/W FGDP'.
- Can 49. Print of #48 (probably Kodak stock 5381). Very little colour has been printed through from the original. Since it is a print, the tones are reversed and the film begins clear with black etching and finishes black with white drawings. The colour section at the end of the original remains, although it is not vivid. There is fungus and some emulsion cracking as well as light scratches.
- Can 50. Three identical 16mm fine-grain black and white dupe-positive prints from #49. Fungus clearly present, some light scratching and slight shrinking. Can contains delivery notice from Kay's Laboratories. Although the stock date is 1973, these prints were obviously made after #49 in 1974.

3.6.2 Notes For The Preservation of *Numen of The Boughs*

Much of the hand-drawn footage is with black ink and this should obviously be tested to determine what it is. Although the ink might be stable, colour has been applied over the drawings and there is an entire colour section towards the latter part of the roll. It is possible that these are 'medical dyes' as used in her earlier films. I would therefore recommend that the same tests be carried out on these elements and that cleaning with solvents be avoided. Parts of the film were meant for use in *Colour Poems* and they will provide an additional reference for how *Numen* might be printed. I do not know why there are three identical fine-grain dupe-positive reduction prints, although I suspect they relate to the use of the film in *Colour Poems*.

3.7 *Colour Poems* (1974)

- Can 40: Colour master positive, Comopt, 16mm, 408ft, 1974.
- Can 41: Colour positive print, Comopt, 16mm, 408ft, 1974.
- Can 42: Colour positive print, Comopt, 16mm, 408ft, 1974.
- Can 43: Positive optical soundtrack, 16mm, 396ft, 1974.
- Can 44: Original hand-coloured master negative, 16mm, 396ft, 1974.
- Can 45: Hand-coloured workprint, 16mm, 391ft, 1974.
- Can 46: A&B roll Sepmag sound tracks, 16mm, 409ft, 1974.

3.7.1 Summary of Film Elements and Condition

Can 40 The master positive printed from #44 is in fair condition. The Technical Records note that scratches and splices on the original negative have printed through. The film is a mixture of live action and selections from *Numen of The Boughs*. Much of this is in the first ‘poem’: 28 seconds of *Numen*, followed by a short sequence of live action which then returns to *Numen* until 65ft. The latter part of the poem (65-81ft) is live action. The next animated sequence is in the fifth poem, ‘Incense’ (196ft) and again, similar scratched drawings are interspersed with live action. There is a short colour, painted sequence until 229ft. In all, there are six sequences of hand-drawn/painted material totalling 82ft. There appears to be no fungus.

- Can 41. The SFTVA have determined this to be the best print of *Colour Poems*. It is a direct print from the negative #44.
- Can 42. A print from the negative #44. The film appears to have shrunk and the sound is poor compared to #40 and #41. No fungus apparent.
- Can 43. Original positive optical soundtrack with fungus.
- Can 44. The original hand-painted colour negative. Tait has hand-coloured over negative sections from *Numen* most often with red and green and obviously the opposite colours were achieved in the positive prints #40, #41, #42 (red appearing as green and green appearing as pink). Section 19-65ft is without colour but dye can be seen under the tape splices which suggests that Tait changed her mind while painting the film and removed the dye from the negative. Two short title sequences are on black and white stock. The film has shrunk and the numerous tape splices are sticky. As can be seen in the prints, there are scratches and some tramlines throughout. The film has fungus and the emulsion is cracking. The *Numen* sections may have been printed from the dupe-positives #50. Finally, a label on the can reads: ‘DO NOT WET CLEAN OR PUT ON WET GATE PRINTER’.

- Can 45. Although this is a workprint, there are hand-painted sections unique to it. Some of the dyes have been applied to the base side of the film and are particularly fragile and vulnerable. There are also white Chinagraph markings with technical instructions. There is fungus and the emulsion is cracking. The can is heavily rusted both inside and out and the label identifies the film as a 'CUTTING PRINT/DUBBING PRINT'.
- Can 46. Two magnetic sound tracks. There are tape joins which are sticky though no fungus is apparent. A hand-drawn dubbing sheet is included in the can and the label identifies the can's contents as 'TRACK A TRACK B 16MM MAGNETIC EDGE TRACKS'.

3.7.2 Notes For The Preservation of *Colour Poems*

Both the label on can #44 stating that the film should not be cleaned nor wet-gate printed and the remains of dye under tape splices suggests that Tait continued to use the water-soluble 'medical dyes' she had used for her previous films. I would therefore recommend the same tests for the elements of *Colour Poems* as for previous films. Tape joins on #46 could be replaced and a new optical soundtrack should be struck. The dubbing chart and Chinagraph marks on the magnetic tracks would assist in a reliable restoration of the sound. Caution should be taken not to 'clean up' the sound beyond what it originally was. Tait worked with simple equipment and the sound is generally quite poor by today's standards.

3.8 *Garden Pieces* (1994-98)

- Can 55: Colour print, Comopt, 16mm, 414ft., 1998.
- Can 56: Colour print, Comopt, 16mm, 414ft., 1998.
- Can 57: Negative optical soundtrack, 16mm, 414ft., 1998.
- Can 58: A&B Roll Master colour negative, 16mm, 414ft., 1994-1998.
- Can 59: 'Further Grove' Colour negative, 16mm, 144ft., 1998.
- Can 60: 'Further Grove' Colour negative + trims, 16mm, 144ft., 1998.

3.8.1 Summary of Film Elements and Condition

- Can 55. This is a show print in good condition. There is no fungus present and only a few light scratches.
- Can 56. A show print, in very good condition. No fungus.
- Can 57. Original negative optical soundtrack. No fungus. There is a Todd-AO laboratory label on the can which shows it has been cleaned and is dated 20-7-98.

- Can 58. The original negative A/B rolls. They are a mixture of Kodak, Agfa, Ilford and Fuji stock with dates varying from at least 1994-1998. The hand-drawn sections are black ink on clear black and white 16mm Agfa stock. Unlike Tait's other films, there are no 35mm elements for this title and it appears that the drawings were made directly onto the Agfa stock. There are hand-written numbers in between the perforations approximately every 40 frames and the drawings were made without adding frame lines. Significantly, there is a colour grader's sheet with all the light changes clearly noted in numeric form. There is no fungus. The label on the can states that the film was ultrasonically cleaned on 24-7-98.
- Can 59. This is a negative relating to the last section of the film. It includes images of slates/'clapper boards' with the title 'Further Grove' written on it. No fungus.
- Can 60. Like #59, there is a roll of footage relating to the last section of the film. It also includes trims. No fungus.

3.8.2 Notes For The Preservation of *Garden Pieces*

In terms of preservation, this is the least complex of all the hand-painted/drawn films. The film has not begun to suffer from fungus and appears to have been stable enough to undergo ultrasonic cleaning at the laboratory. Other than black inks used to draw on the Agfa stock, Tait did not apply any colour dyes. It is possible that she used the same drawing inks for *Numen of The Boughs* and if so they may likewise be stable. Having the grader's timing sheet is essential for achieving the colours that Tait decided upon and it should be treated with care. With this record, the technique Tait used to colour the hand-drawn sections can be clearly understood: Grading lights with a value around 25 are considered normal. Where there are one or two zeros in the light (i.e 10 00 10), this indicates an overall shift in colour (the above example would be green) and such exposures would flash the background of the picture area. The original clear Agfa stock with black ink drawings has been flashed with colour to give the finished result of white drawings on a dense, richly coloured background. There is no urgency to work on the preservation of this title and the film elements can be considered stable and well preserved. There are two prints in good condition, one of which should be treated as a master positive. An adequate and economic method of preservation would be to make an interpositive from the original negatives. Having the original grading sheet should ensure that a fairly faithful reproduction would be achieved.

4 Restoration and Duplication

4.1 Suggested Routes

[Different film stocks] can present different colour degradations depending on the chemical nature and individual properties of the dyes, the photochemical processing and the storage conditions. This is why the development of a general technique for the restoration of the image is not possible. Each film constitutes a particular case and requires the choice of the most adequate technical process of restoration.⁵⁵

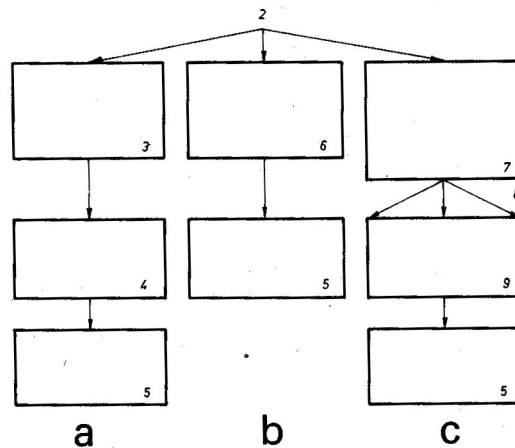
Having suggested methods of testing and offered an analysis of all the hand-painted films, I shall briefly outline three possible routes of duplication.

4.2 Duplication by Eastman Colour Internegative Film

This is the most common method of preserving a film. In many cases it is perfectly adequate and most economical. The availability of technical information on this method is excellent and film archive staff are familiar with the labour involved. The illustration overleaf shows how this work might be undertaken.⁵⁶

⁵⁵*Preservation and Restoration of Moving Images and Sound*, FIAF, 1986, 81.

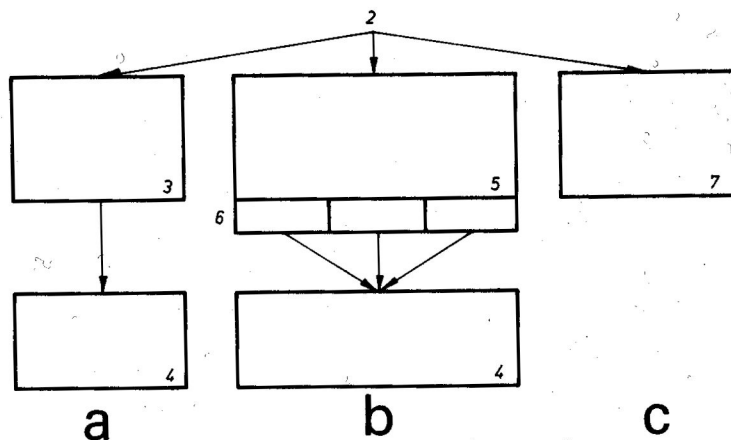
⁵⁶*Preservation and Restoration of Moving Images and Sound*, FIAF, 1986, 84.



Restoration of negative colour images by correcting printing.

- 2 Original colour negative.
- 3 Dupe colour positive on intermediate film.
- 4 Dupe colour negative on intermediate film.
- 5 Colour copy on positive colour film.
- 6 Dupe colour negative on reversible intermediate film.
- 7 Dupe black-and-white positive separation on panchromatic separation film.
- 8 Blue - green - red.
- 9 Dupe colour negative on intermediate film.

Figure 7-2



Restoration of positive colour images by correcting printing.

- 2 Original colour positive.
- 3 Colour negative on negative colour film.
- 4 Copy on positive colour film.
- 5 Colour selections on dup panchromatic negative film.
- 6 Red - green - blue.
- 7 Copy on reversible colour film.

For the production of a colour master positive from a colour negative, I would recommend using Kodak 2242/3242⁵⁷ polyester intermediate film. The alternative would be the acetate 5242/7242. Polyester stock is much more stable than acetate stock, is believed to last longer, does not shrink to the degree that acetate does, and

⁵⁷The first 4 digit number refers to the 35mm stock and the latter to the 16mm version.

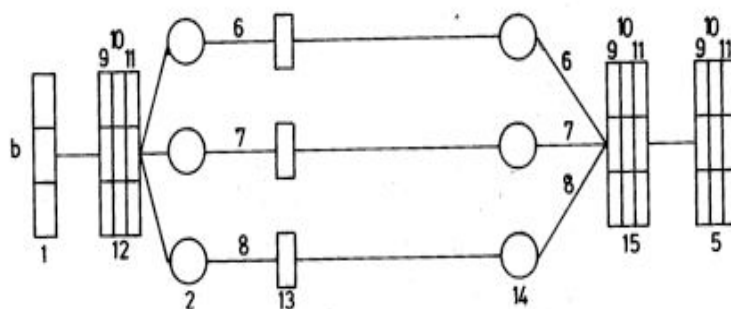
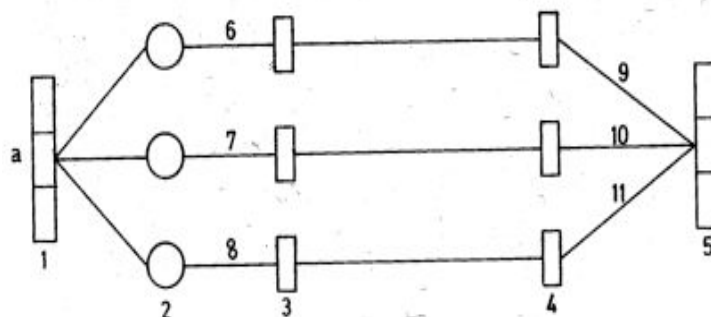
is very resistant to micro-organisms.⁵⁸ For the production of a colour master positive from a colour reversal film, the polyester intermediate stock would be 2272/3272. The resulting colour negatives are made using process ECN-2 and printed onto Kodak Vision colour print stock 2383/3383 resulting in a reasonable copy of the film in its current state.

4.3 Duplication by Black and White Separation Positives

By contrast, for all the films under discussion the production of black and white separation positives is a much better method of ensuring accurate duplication and excellent preservation elements. The illustration overleaf is helpful to understand this process.⁵⁹

⁵⁸“Gelatine emulsion layers have the potential to last for centuries; together, polyester base, gelatine emulsion layers, and the correct choice of image substance will yield a pictorial recording medium that should survive five centuries or more at room temperature and moderate RH.” Reilly, 1993, 15.

⁵⁹Preservation and Restoration of Moving Images and Sound, 1986, 72.



Illustrative scheme of photographic reproduction of the colours by means of b/w extractions.

- | | |
|----------------------|---------------------|
| 1 Original. | 9 Yellow. |
| 2 Selection filters. | 10 Magenta. |
| 3 B/W negative. | 11 Cyan. |
| 4 Matrix. | 12 Colour negative. |
| 5 Positive copy. | 13 B/W positive. |
| 6 Blue. | 14 Strict filters. |
| 7 Green. | 15 Internegative. |
| 8 Red. | |

Separations from the original hand-painted films will last far longer than the first method of duplication by colour internegative. With separations, when a new print is needed the three black and white films are printed onto a single Eastman (or Fuji) colour Intermediate film to make a new colour negative from which a new print can be made.⁶⁰ Currently, the preferred choice of film stock would be Kodak Panchromatic Separation Film 2238, a polyester black and white stock for

⁶⁰Paraphrasing an email from Read, 6th July 2002.

making separation masters from both colour negatives and positives. The film can be developed as either positive or negative, depending on the original. At this point, the films would be very well preserved but a restoration would require another set of separations from the new negative or even better, straight from the originals again; this time, varying the levels of exposure and contrast to restore the original dye colours. With regards to the sound track, a new optical track would be made on polyester panchromatic Kodak 2374 stock (the modern version of stock which Tait used to paint on!).

4.4 Digital Restoration for Duplication to Film

A route for ensuring the most accurate restoration would be to scan the films to data. The basic route of digital restoration is as follows:

The film image ▷ film scanner ▷ digital image store ▷ workstation ▷ digital image store ▷ film recorder ▷ film⁶¹

In this method, the film is scanned to data files when most of the colours are restored by the telecine operator. The restoration is then completed at a workstation with the operator precisely matching the data to colour samples obtained from the dye tests previously mentioned. The data may be digitally ‘retouched’ and any deterioration in the form of scratches and marks can be removed. The files are then re-recorded back to film on a colour intermediate stock from which prints are made. It may be noted that this method is much closer to the practice of restoring other forms of art such as a paintings. Typically, these are physically worked on by the restorer unlike traditional film restorations which are basically variations on duplicating.

There are several choices to be made once the digital route has been decided upon, as seen from the following diagram.⁶²

Restoration via this method allows the Archive the greatest range of flexibility for manipulating the films from their current condition in order to produce new prints which are judged to be as close as possible to the films Tait originally showed. It necessitates close communication with the workstation operator whose job it is to ‘restore’ the image as there is a greater amount of flexibility over photochemical restoration and duplication. The digital route is recommended should the SFTVA carry out the dye test I discussed since this will provide exactly the kind of technical data which digital restoration favours. Whereas photochemical restoration by duplication is greatly governed by the limits of the narrow range of film stock available to carry the job out, practically anything is possible with digital restoration (the only ‘limitation’ in the process occurs when recording back to film stock which has given physical attributes) and thus in practice it requires confident technical decisions based on thorough research of the films. This might seem like an obvious requirement for any kind of duplication but because digital manipulation of the image introduces an additional ethical dimension which is still very much under

⁶¹Read & Meyer, 2000, 219.

⁶²Diagram from a presentation by Paul Read at The East Anglian Film Archive, July 2002.

close peer scrutiny, any archive undertaking this kind of work at the moment should expect to be fully accountable and transparent in their decision making. Not a bad thing by any means!

The main obstacle to digital restoration is funding. The cost of scanning and workstation time remains well out of the range of most small archives although it should be noted that the cost of a full restoration via black and white separations is often comparable if not more costly. Within the next year or so, it may be feasible to operate an affordable workstation within the archive although the all-important scanning and recording is likely to remain with the commercial post-production companies. The SFTVA were quoted the following Euro prices in July 2002:

- 1.57/frame scanned
- 170/hr of workstation time
- 1.36/frame recorded to 35mm film

Special rates may be available for lengths longer than 10 minutes. At these prices, *Calypso* (404ft) would cost 10,148 to scan and 8791 to record back to film with additional costs for the workstation time. Clearly a very expensive process although it has been suggested to me that because of the uniqueness of this project, partial funding would be readily available.

5 Conclusions

I'm not really interested in 'recording for posterity.' That's an incidental, or accidental value or interest that any of my films might have (not what I'm making it for). I make my films for audiences who are there at the time - for a response at the time.⁶³

5.1 On The Idea of Permanence

In my introduction, I stated that I believe it is the Archivist's job to be able to offer an alternative understanding of the 'ravages of time'. I also began this paper by wanting to highlight both the philosophical and ethical nature of the profession, concentrating on our idea of permanence which I believe to be at the heart of this ethic. At every stage, our conceptualisation of 'permanence' informs how we approach collecting, restoring, preserving and presenting moving images. Prior to collecting, we tend to classify. That is, we prioritise, in a hermeneutic sense, certain objects based on our location in history. Thus, what we choose to classify are "truly the mirror of our thoughts, its changes through time are the best guide to the history of human perception."⁶⁴ Collecting, as the material embodiment of classifying, presumes the possibility of a degree of permanence in that which is being collected. The truly ephemeral escapes us, the fragile demands our attention and excitement, the enduring provides us comfort. In all, the objects we collect and the

⁶³ Margaret Tait: *Filmmaker*, 1983.

⁶⁴ Purcell & Gould, *Illuminations: A Bestiary*, 1986, 14. Quoted in Elsner & Cardinal, *The Cultures of Collecting*, 1994, 2.

way in which we collect them are extending the knowledge that we have inherited to contribute towards a persisting social order. In reality, that is where our idea of permanence tends to be fulfilled; not in the relatively fleeting existence of the object itself (nor the fleeting pleasure found in the object) but in the continuing social order to which its classification and collecting has contributed.

Archives tend to be distributed according to place: usually national, regional, local or individual. These terms themselves are based on classifying people into collectives such as British, Scottish or Orcadian, like Margaret Tait. As Gould noted, what we collect is a mirror of ourselves (or for the individual collector, her Self) and that may reflect an inherited inclination towards certain things or, if we choose to distinguish ourselves from the past, we might collect to assert our independence. The Scottish Film and Television Archive fulfils both these roles by collecting moving images which emphasise the collective cultural inheritance/heritage of the Scottish people and also images which are unique to Scotland, (i.e. their significance might be that they are not images of/by the English, Welsh or Irish).

Margaret Tait's work has been classified by the Archive to be of the highest historical importance (grade one out of three). The reasons for this are obvious: the films are technically and aesthetically unique, the collection is extensive and quite complete, the biographical details of the film maker contribute to national, regional and local historical narratives. The films clearly identify the film maker as Scottish, not in a stereotypical way, but rather they add to the diversity of the Archive's collection which mirrors the image of the diversity of the Scottish themselves. By preserving Tait's films (which might outlive us but are not permanent), the Archive and its Archivists are engaged in preserving a social order (also called 'our heritage') which in one form or another is as old as our idea of permanence itself. I hope this goes some way to explaining my earlier comment about Archiving being a profession which attempts to extend the life of a culture, society, institution or individual by extending the life of the image or representation of these entities. It is not as foolish an enterprise as it might first appear as it shows an acceptance of the inevitable mortality of mankind but an understanding that social order can and must continue.

As Archivists, our idea of permanence should not be restricted to primarily the physical permanence of the object but more towards the collective social sense which we derive from the images we consume daily. The Archivist's responsibility to society is that we are able to duly classify this overwhelming number of images and justify our decision to collect them for the continuing benefit of others. Ideally, it is a selfless profession that offers people opportunities for pleasure and learning today while ensuring that limited economic resources are invested in preserving over time information that is of benefit and use to society. In the end, it comes down to the apparently unavoidable conflict between preserving moving images and providing adequate public access to them. The answer, I suppose, is to be pragmatic and treat each instance of conflict separately.

So what of Margaret Tait and her five hand-painted films? I have already offered some of my own thoughts on why I think they are worth investing in and I'm sure

the SFTVA could offer more of their own. Yet returning to the more practical aspects of restoration and preservation, I have indicated that the possible cost of full restoration separations or a digital restoration would be very high. How is the spending of public money, usually received in the form of grants, justified in this instance? Ironically, funding would also be needed to promote to the public how their money is being well spent. This is where the biographical details of Tait's fascinating life are useful; to show that these unusual films are more than just dancing colours on a screen. We can show that they were the life's work of a woman who gave up medicine because of the feeling "that it was necessary to do something more than just simply bringing people back to bodily health."⁶⁵ That these films have a personal history, a personality even, is not only vital in justifying their preservation but also important to the new status they have attained as social documents. Although Tait may not have been interested in recording for posterity, we have seen that when closely observed, the films document the labours of an artist who, throughout her life, was an exception in Scotland. The technical and the biographical are no more intimately interwoven than when we see how she painted with 'medical dyes'. To emphasise this holistic nature of her method would show that they are not only film-poems, sometimes funny, quite often serious, but innovations that stretch beyond the usual boundaries of film making.

References

- [1] Aurand, Ute. [Obituary] 'Margaret Tait'. Translated from the German. First appeared in *epd Film*, Frankfurt, June 1999.
- [2] Bell, Gavin. 'A Reel Visionary', *The Scotsman*, 27th September, 2000.
- [3] British Film Institute databases: SIFT; Film Index International.
- [4] Conservation Center for Art and Historic Artifacts (CCAHA). *Mold. Managing a Mold Invasion: Guidelines for Disaster Response*, Philadelphia, 1996.
- [5] Curtis, David. [Obituary] 'Britain's Oldest Experimentalist... Margaret Tait', *Vertigo*, 1999.
- [6] Elsner, John & Cardinal, Roger. *The Cultures of Collecting*. Reaktion Books, London, 1994.
- [7] Gurr, Edward. *Staining Animal Tissues. Practical and Theoretical*, Leonard Hill Books Ltd., London, 1962.
- [8] *Encyclopedia of Microscopic Stains*, Leonard Hill Books Ltd., London, 1960.
- [9] Horrocks, Roger. *Len Lye*, Auckland University Press, Auckland, 2001.
- [10] International Federation of Film Archives (FIAF). *Preservation and Restoration of Moving Images and Sound*, FIAF, 1986.

⁶⁵ *Margaret Tait: Filmmaker*, 1983.

- [11] Leggett, Mike. 'Margaret Tait', *A Directory of British Film & Video Artists*. Ed. David Curtis. The Arts Council of England. University of Luton Press. 1997.
- [12] Le Grice, Malcolm. 'Independent British Cinema', *Studio International*, May 1975.
- [13] Lillie, R.D. *H. J. Conn's Biological Stains*, (8th Ed.) The Williams & Wilkins Company, Baltimore, 1969.
- [14] Moir, Jan. 'First Person Highly Singular', *The Guardian*, 31st March, 1993.
- [15] O'Toole, James M. 'On The Idea of Permanence', *American Archivist*, Vol. 52, 1989.
- [16] Pirie, Alex. *Margaret Tait Film Maker 1918-1999. Indications Influences Outcomes*, Published as a special one-off edition of Poem Film Film Poem. South London Poem Film Society. Vol. 6, April 2000.
- [17] Read, Paul & Meyer, Mark-Paul. (Eds.) *Restoration of Motion Picture Film*, Butterworth Heinemann, Oxford, 2000.
- [18] Redding, Judith M. & Brownworth, Victoria, A. *Film Fatales Independent Women Directors*, Seal Press, Seattle, 1997.
- [19] Reilly, James, M. *IPI Storage Guide For Acetate Film*, RIT, Rochester, 1993.
- [20] Ryan, Roderick T. *A History of Motion Picture Color Technology*, Focal Press, London, 1977.
- [21] Stevenson, Gerda. [Obituary] 'The late Margaret Tait, film-maker - an appreciation', *The Orcadian*, 20th May 1999.
- [22] Stevenson, Gerda. [Obituary] 'Margaret Tait'. *The Scotsman*, 5th May 1999.
- [23] Sussex, Elizabeth. [Obituary] 'Margaret Tait'. *The Guardian*, 13th May 1999.
- [24] 'Margaret Tait, Film-maker'. *The Financial Times*, 9th September 1970.

Miscellaneous papers:

(Full references unavailable. Please contact Joss Winn <joss@joss Winn.org>, SFTVA or BAFVC. Others not listed are also available).

- [Misc.] Pirie, Alex. 'Margaret Tait Film Maker', 1979. [Various Ancona Films promotional material for many titles]. 'Margaret Tait, Film Maker'. [Draft scripts for the Channel Four series, *Eleventh Hour*, 1983].
- [Letters] Pirie, Alex. 'Margaret Tait's Films', 31st January 2000. Tait, Margaret. Letters to David Curtis, 7th December 1981, 12th July 1983, 17th August 1998, 1st October 1998, 3rd February 1995, 14th May 1998.

- [Obituaries] Grigor, Murray. 'Margaret Tait'. n.d. 'Margaret Tait'. *The Times*, 28th May 1999.
- [Articles] Hollander, Peter. Unpublished autobiography. n.d. Krikorian, Tamara. 'On The Mountain and Land Makar: Landscape and Townscape in Margaret Tait's Work'. January 1983. Kwietniowski, Richard. 'The Autonomous Film-Maker. Margaret Tait: Films & Poems 1951-76'. Edited version of Leggett, 1976. Leggett, Mike. 'The Autonomous Film-Maker. Margaret Tait: Films & Poems', 1979. MacDiarmid, Hugh. 'Intimate Film Making in Scotland. The Work of Dr. Margaret Tait'. n.d. Shure, Robert. 'The Long Light Days of Margaret Tait'. n.d.
- [Programme notes] '3rd International Festival of Film and Television in The Celtic Countries. Wexford Ireland. 28th March-2nd April, 1982'. 'Film Maker on Tour Margaret Tait'. n.d. 'Film Makers on Tour - Margaret Tait. 7th December 1977. NFT 'Where I Am Is Here'. n.d. NFT 'Art In The Cinema. The International Avant-Garde Film' n.d. Medienkunst Festival Osnabrück, 1988.